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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/840,019	04/23/2001	Charles R. Mathews	AMDI:103/HON	4253

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TIMOTHY M HONEYCUTT ATTORNEY AT LAW  
P O BOX 1577  
CYPRESS, TX 77410

EXAMINER

CRUZ, LOURDES C

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 12/10/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/840,019

Examiner

Lourdes C. Cruz

Applicant(s)

MATHEWS ET AL

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Response to communication(s) filed on 30 October 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) 29-40 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 April 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

### **DETAILED ACTION**

Applicant's election without traverse of claims 1-28 in Paper No. 8 is acknowledged.

#### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the insulating film positioned on the substrate, which also meets the limitations from which it depends on (claim 5, for example); the plurality of junctions connected in series (Claim 11,19,28) must be shown or the features canceled from the claims. No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

#### ***Specification***

The disclosure is objected to because of the following informalities: Page 11, line 9 of the disclosure should most likely refer to 134 rather than 132 as a substrate.

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3-6,11,14,15,19 and 20-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 recites a structure comprising an island surrounded by an insulating material. See that this implies an island and an insulating material surrounding the island. It is unclear as to how these two elements are supported by the specification. Recitation of these structures has rendered the claim unclear. Regarding claims dependant upon these limitations, it is unclear as to how this material comprises part of the insulating substrate.

Regarding claim 6, it is not clear how the heat slug is in the insulating film.

Regarding claim 11, it is unclear how the Peltier heat transfer device comprises pn junctions.

Regarding claims 14, 22 it is unclear how the insulating material comprises part of the insulating substrate.

Regarding claims 15,23 it is unclear if applicant refers to two different insulators comprising the film.

Claim 20 recites a plurality of circuit devices positioned on the semiconductor layer. This does not concord with that disclosed on page 4, lines 30+ of the specification. Moreover, the recitation of at least one Peltier device that follows the above, make the claim even more confusing and unclear.

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Additionally, regarding claims 11,19, and 28, it is unclear as to how exactly pn junctions are present in the Peltier slug.

See that the 112 problems are numerous. Therefore, the Application has been examined as best understood by the examiner.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

Claims 1-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Adler et al. (US 6476483).

Adler et al. discloses (See cover Fig. as seen up-side down) a circuit device comprising:

An insulating substrate 38; a semiconductor structure 16 on the substrate; and a Peltier 44,46 effect device coupled to the insulating substrate to transfer heat between the semiconductor structure and the insulating substrate.

Adler et al. also discloses:


- A semiconductor substrate 38 wherein the insulating substrate is positioned on the semiconductor substrate
- The Peltier effect device is positioned in the insulating substrate 38 and in the semiconductor substrate 52
- insulating film 26
- the insulating substrate comprises oxide
- The semiconductor structure comprises silicon
- See that a MOS device is disclosed, therefore pn junctions connected in series are inherent (See region 17)
- The Peltier device is partly in the insulating substrate and partly in the semiconductor substrate
- See that Silicon oxide<sup>34</sup> surrounds the active regions

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lourdes C. Cruz whose telephone number is 703-306-5691. The examiner can normally be reached on M-F 10-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L Talbott can be reached on 703-305-9883. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Lourdes C. Cruz  
Examiner  
Art Unit 2827



Lourdes Cruz  
December 2, 2002



JEROME JACKSON  
PRIMARY EXAMINER